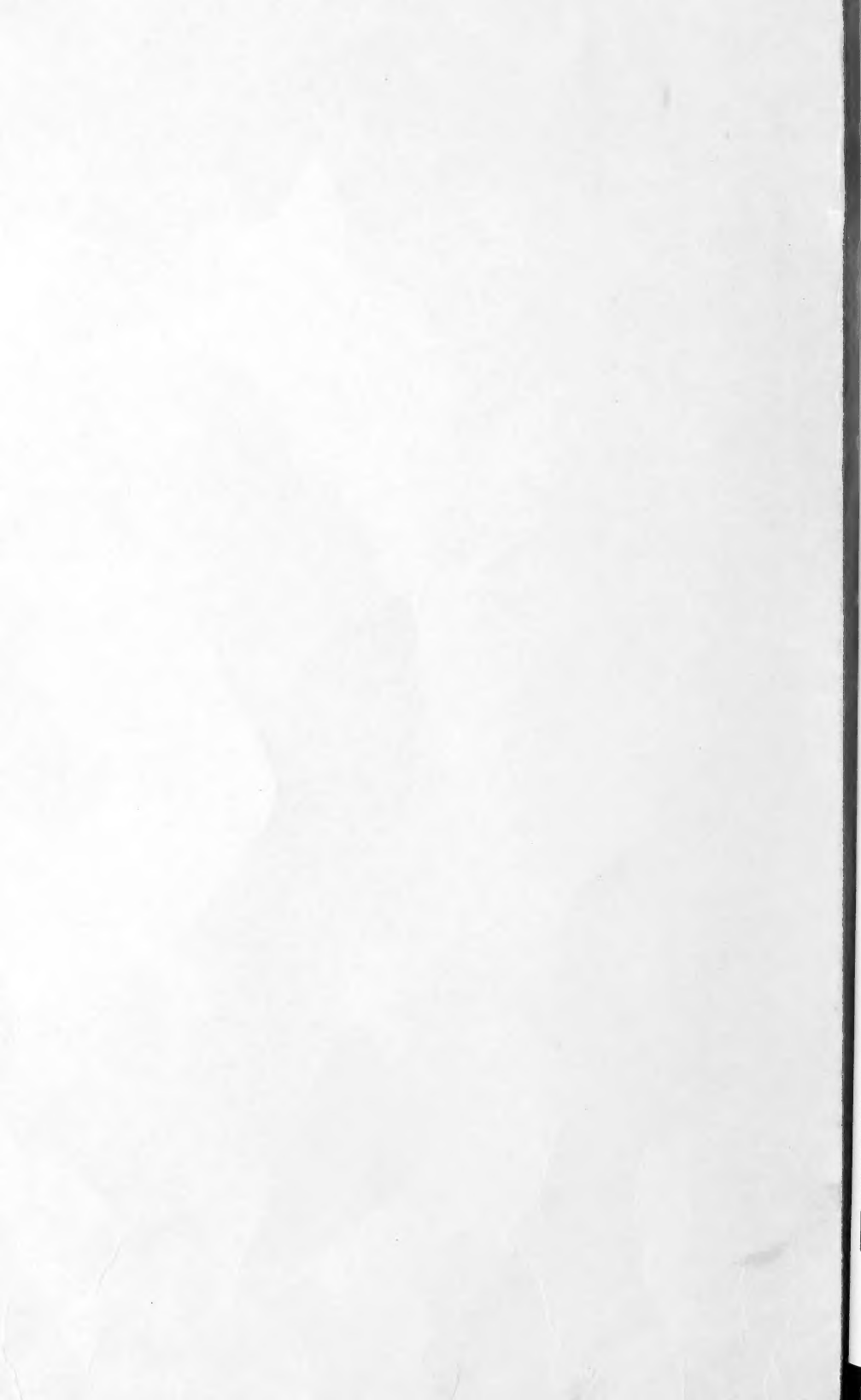


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LEAFLET
NO. 222

The Home
FRUIT GARDEN

*in the Northern Great Plains,
Northern Mountain, and
Intermountain States*



U. S. DEPARTMENT OF AGRICULTURE

THE HOME FRUIT GARDEN IN THE NORTHERN GREAT PLAINS, NORTHERN MOUNTAIN, AND INTERMOUNTAIN STATES¹

The National Nutrition Conference, held in Washington, D. C., November 1941, urged Americans to eat more fruit.

Well-ripened, sound fruits increase the healthfulness, variety, attractiveness, and palatability of meals. Despite the relatively large available supplies of fruit, many families, especially on farms, do not have adequate quantities in the diet. In almost every part of this country certain fruits that usually require little or no spraying can be grown successfully in farm or suburban fruit gardens. Fruits needing spraying are not so well suited for home production. By properly selecting the kinds and varieties of fruit for home planting a succession of fresh fruit of high dessert quality can be available during much of the summer season, and surpluses may be canned, preserved, dried, or, in some cases, frozen for use during other seasons. Such home consumption of fruits, together with purchases of kinds that cannot be grown successfully, should improve the diet and general health.

This leaflet lists the best kinds and varieties of fruits for home planting in the region and gives brief directions for their care. Detailed information can be obtained from the agricultural extension service or agricultural college in each State.

Climatic Districts for Fruit

Summer and winter temperatures, rainfall, and prevalence of diseases and insects are all important in determining the varieties that can be grown in the different parts of the country. While many fruits are not hardy in most of this region, some kinds can be grown in almost every home garden. On the map (fig. 1) the region is divided into districts based chiefly on the length of the growing season. In general, the same fruit varieties can be grown throughout a district.

Kinds and Varieties to Plant

Under most conditions in this region the best fruits for the home garden are, in order of adaptability where spraying is not practiced, (1) cherry-plum hybrids, (2) plums, (3) currants,² (4) strawberries, (5) gooseberries,² (6) crab apples, (7) grapes, and (8) raspberries. Under the more favorable conditions of temperature and available water for irrigation, cherries, pears, peaches, apricots, and apples may be grown also. Certain native fruits, including buffaloberries, chokecherries, wild plums, Juneberries (serviceberries), American cranberry-bush, and western sand cherries, may be of value in parts of this region.

¹ Prepared by the staff of the Division of Fruit and Vegetable Crops and Diseases, Bureau of Plant Industry, with the collaboration of horticulturists of the States in the region. The varieties suggested herein are based on those recommended by these horticulturists.

² Plant only where quarantine regulations permit.

In all areas fruit trees and grapes are benefited by proper spraying, and in the vicinity of commercial orchards and vineyards fruits in the home garden should be sprayed to prevent the spread of insects and diseases. In almost all parts of the country, however, certain fruits can be grown that do not require spraying and that add greatly to the variety and healthfulness of the diet. A well-planned garden of the most satisfactory fruits should prove a source of great enjoyment and satisfaction and may have economic value.

The cherry-plum hybrids and hardy plums are adapted to the northern Great Plains area, which includes most of Montana, eastern Wyoming, the Dakotas, and Nebraska. Currants and gooseberries succeed and are among the most valuable fruits wherever the moisture supply is sufficient, but they are too subject to fruit worms in the mountain areas to be regularly useful.

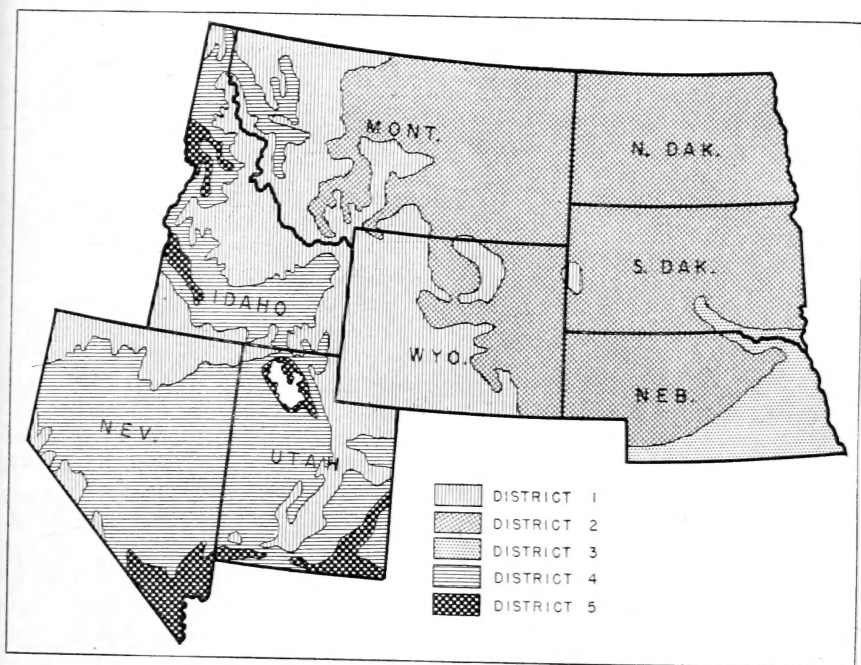


FIGURE 1.—Map of northern Great Plains, northern Mountain, and Inter-mountain States. District 1—high elevations; very low winter temperatures; growing season less than 90 days; not adapted to fruit growing. District 2—growing season 90 to 150 days; low winter temperatures and low annual rainfall make possible the growing of only especially hardy and drought-resistant fruit varieties, except possibly in sheltered valleys or on sunny slopes, with added winter protection; in the eastern parts of the Dakotas and Nebraska where the annual rainfall amounts to 20 inches or more, many fruit gardens may be grown successfully without irrigation; in the more western parts without irrigation, however, few varieties of fruits thrive. District 3—longer growing seasons, more favorable temperatures, and availability of sufficient soil moisture make possible the growing of many standard fruit varieties of good quality. District 4—elevations 4,000 to 6,000 feet; growing season 90 to 150 days; in favorable locations where water is available for irrigation some fruits may be grown. District 5—elevations less than 4,000 feet; growing season of 150 to 240 days; favorable temperatures and water available for irrigation make possible the growing of many standard varieties of fruits.

Strawberries are also well adapted to gardens in this region. They are the first fruit to ripen, are of fine flavor, and are highest in vitamin C content of any fruits that can be grown in this region. Even when frozen, strawberries keep their high vitamin C content for many months. Therefore, strawberries should be a part of almost every garden.

Only the Beta grape is hardy in most of the region. Some other varieties may be grown in eastern Nebraska near the Missouri River and under irrigation at the lower elevations in Utah and Idaho.

Varieties recommended for medium-sized gardens are listed in table 1. Some of the varieties suggested are different from those grown in commercial plantings. Usually more than one variety is listed in order to cover a long season. Two or more varieties of apples, pears, and sweet cherries should be planted for cross-pollination.

Planting and Care

SOURCES OF PLANTS.—Fruits adapted to this region are propagated by commercial nurserymen, who are generally dependable sources of fruit varieties. Names of nurseries can be supplied by the State agricultural extension service.

LOCATION OF PLANTING.—Although it is generally desirable to have the planting near the house and perhaps adjacent to the vegetable garden, this may not be the most favorable location. In general, the planting should not be in a low area but on moderately elevated land or on a north or northeastern slope that will provide satisfactory air drainage. A north or northeastern slope has better protection from drying winds in summer and from bright sunshine in winter and early spring. In all the Plains area the fruit garden must have protection from the wind. Natural hills, woodlands, buildings, or trees planted as windbreaks may furnish this protection. The windbreak should be 5 or 6 feet high before the fruit trees are planted. Protection from the west, south, and north is needed in that order of importance. A 5-row windbreak with the fruit garden starting 50 feet from the last row is suggested. Fruit trees should not be planted near wood lots or shade trees, since full exposure to sunlight is needed.

SIZE OF PLANTING.—The size of the planting will vary with the space available. In some locations there may be space for only a row or two of berries by a fence, a few fruit trees around the buildings, or a few grapevines on an arbor or a fence. In other locations the size of the planting is determined by the needs of the family and by the kinds of fruit that can be grown. Most small gardens (10 by 50 feet to 30 by 50 feet) should consist mostly of berries. A half-acre garden that will furnish fruit in season for a large family is diagrammed in figure 2.

WHEN AND HOW TO PLANT.—In this region trees and plants should be set as early in the spring as it is possible to prepare the soil. The ground should be prepared as thoroughly as for a vegetable garden. It is important that the plants be entirely dormant, with no buds starting, at time of planting; the roots should not be allowed to dry out. Berries and grapes should be set at the same depth as they grew in the nursery. The fruit trees should be set slightly deeper. The roots should be spread out when the plants are set. When the holes are dug the topsoil and subsoil are separated. The topsoil is

TABLE 1.—Varieties suggested for medium-sized gardens for representative sections of districts shown in figure 1

DISTRICT 1 (WESTERN MONTANA, CENTRAL, EASTERN, AND SOUTHWESTERN IDAHO; MOUNTAINOUS COUNTRY NOT WELL ADAPTED TO FRUITS)¹

DISTRICT 2 (NORTH DAKOTA AND SOUTH DAKOTA, WESTERN NEBRASKA, EASTERN WYOMING, AND THE MOST FAVORABLE LOCATIONS OF MONTANA)

| Fruit | Variety | When ripe | Plants | Length of row | Fruit | Variety | When ripe | Plants | Length of row |
|----------------------------|------------|-------------|--------|---------------|---------------------|-------------|-----------|--------|---------------|
| | | | No. | Feet | | | | No. | Feet |
| Strawberry. ² | Dunlap | July | 50 | 100 | Cherry-plum hybrid. | Oka | Aug | 3 | 30 |
| Rasp- berry. ² | Gem | Everbearing | 50 | 75 | | Opata | do | 3 | 30 |
| | Chief | July | 40 | 100 | | Sapa | do | 3 | 30 |
| | Latham | do | 40 | 100 | | Compass | do | 3 | 30 |
| Grape | Beta | Sept | 10 | 80 | | Red Duchess | do | 50 | 50 |
| Currant ³ | Red Lake | July | 10 | 50 | Apple | Anoka | do | 50 | 50 |
| Goose- berry. ³ | Golden | do | 4 | 32 | | Wealthy | Sept | 2 | 50 |
| Sour cherry. | Pixwell | do | 10 | 50 | | Haralson | do | 2 | 50 |
| | Coronation | do | 4 | 60 | Crab apple. | Dolgo | Aug | 4 | 100 |
| | Tecumseh | Aug | 2 | 40 | June- berry. | Florence | do | 4 | 100 |
| | Underwood | do | 2 | 30 | | Success | July | 5 | 40 |
| Plum | Waneta | Sept | 2 | 30 | | Scout | do | 3 | 45 |
| | Wyant | do | 2 | 30 | Apricot | Morden | do | 3 | 45 |
| | Ember | do | 2 | 30 | | Manchu | do | 3 | 45 |

DISTRICT 3 (EASTERN NEBRASKA AND MISSOURI RIVER VALLEY OF SOUTHERN SOUTH DAKOTA; WELL ADAPTED TO FRUITS)⁴

DISTRICT 4 (PARTS OF IDAHO, UTAH, AND NEVADA; ELEVATIONS MOSTLY 4,000 TO 6,000 FEET)

| | | | | | | | | | |
|----------------------------|---|-----------|-----|-----|---------|-----------------------|-----------|---|----|
| Straw- berry. | Twentieth Century or Berri Supreme (P. W. Mammoth). | June-Oct | 100 | 150 | Plum | Italian Prune | Aug.-Sept | 2 | 40 |
| | Redheart | June | 100 | 200 | | Sessions | Sept | 2 | 40 |
| Rasp- berry. | Newburgh | June-July | 30 | 75 | | Green Gage | do | 1 | 20 |
| | Latham | do | 30 | 75 | | Pottawatomie | Aug | 2 | 40 |
| Grape | Indian Summer | June-Sept | 30 | 75 | Pear | Clapp Favorite | Sept | 1 | 20 |
| | Beta | Aug | 10 | 80 | | Bartlett | do | 2 | 40 |
| Sour cherry. | English | July | 1 | 20 | | Seckel | do | 1 | 20 |
| | Morello. | do | 2 | 40 | Apple | Red Astrachan or Lodi | Aug | 1 | 30 |
| Sweet cherry. ⁵ | Montmorency | do | 1 | 20 | | Early McIntosh. | Sept | 1 | 30 |
| | Lambert | do | 1 | 20 | | Wealthy | do | 1 | 30 |
| | Windsor | do | 1 | 20 | Apricot | Black Mack | do | 2 | 60 |
| | | | | | | Cortland | do | 1 | 30 |
| | | | | | | Moorpark | July-Aug | 1 | 20 |

DISTRICT 5 (PARTS OF IDAHO, UTAH, AND NEVADA; ELEVATIONS LESS THAN 4,000 FEET)

| | | | | | | | | | |
|----------------------------|--------------------|-----------|----|-----|--------------------|-----------------|-----------|---|----|
| Straw- berry. | Marshall | June | 75 | 150 | Plum | Italian Prune | Aug.-Sept | 2 | 40 |
| | Redheart | do | 40 | 80 | | Peach | do | 1 | 20 |
| | Twentieth Century. | June-Oct | 25 | 50 | | Pacific Prune | do | 1 | 20 |
| Rasp- berry. | Newburgh | June-July | 20 | 50 | | Sessions | do | 1 | 20 |
| | Taylor | do | 20 | 50 | Pear | Bartlett | Sept | 2 | 40 |
| | Latham | do | 20 | 50 | | Anjou | Sept.-Oct | 1 | 20 |
| Grape | Indian Summer | June-Sept | 20 | 50 | | Red Astrachan | Aug | 1 | 30 |
| | Fredonia | Aug | 3 | 24 | | Early McIntosh. | Sept | 1 | 30 |
| | Golden Muscat | do | 3 | 24 | Apple ⁶ | Black Mack | do | 1 | 30 |
| | Niagara | Aug.-Sept | 3 | 24 | | Starking | do | 1 | 30 |
| Sour cherry. | Concord | do | 3 | 24 | | Red Rome | Oct | 1 | 30 |
| | Montmorency | July | 1 | 20 | | "Beauty" | | | |
| Sweet cherry. ⁵ | Napoleon | June-July | 1 | 20 | Apricot | "Chinese" | July | 1 | 20 |
| | Lambert | do | 1 | 20 | | Moorpark | do | 1 | 20 |
| | Black Tartarian | do | 1 | 20 | | Golden Jubilee | Aug | 1 | 20 |
| | | | | | Peach | Halehaven | do | 1 | 20 |
| | | | | | | Early Elberta | Sept | 1 | 20 |
| | | | | | | J. H. Hale | do | 1 | 20 |

¹ Try strawberries, raspberries, and cherry-plum hybrids suggested for district 2.² Cover in winter.³ Plant only where quarantine regulations permit.⁴ Same varieties as in district 2 and in addition Portland, Delaware, Niagara, and Concord grapes, and Rockhill strawberries may be grown in this district.⁵ Either Tartarian or Windsor must be included for cross-pollination of other sweet cherry varieties.⁶ Apples should not be planted unless they are to be sprayed.

placed about the roots of the tree in the holes and the subsoil is used last to fill up the rest of the hole. The soil should be thoroughly firmed about the roots to prevent drying out and to help hold the tree in position.

PRUNING BEFORE PLANTING.—Before strawberries are planted all fully developed leaves should be picked off. The canes of raspberries should be cut back to 6 inches at time of planting. Grapevines are

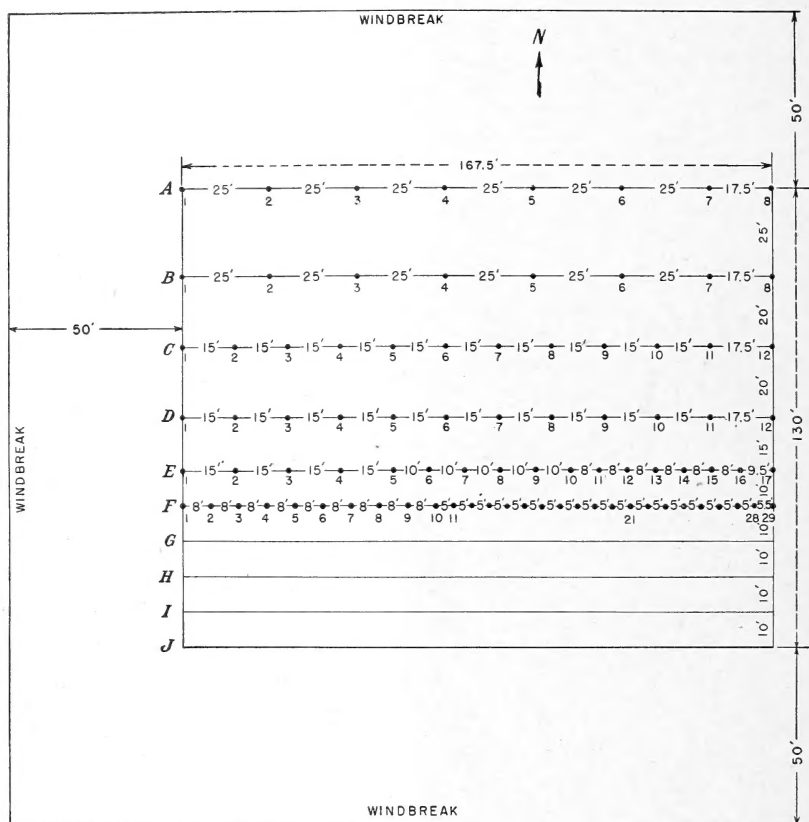


FIGURE 2.—Suggested arrangement for a half-acre fruit garden. Row *A*—Nos. 1 to 8, apples. Row *B*—Nos. 1 to 8, crab apples. Row *C*—Nos. 1 to 12, plums. Row *D*—Nos. 1 to 8, cherry-plum hybrids; Nos. 9 to 12, apricots. Row *E*—Nos. 1 to 4, cherries; Nos. 5 to 9, Juneberries; Nos. 10 to 17, Golden currant. Row *F*—Nos. 1 to 10, grapes; Nos. 11 to 20, gooseberries; Nos. 21 to 29, currants. Rows *G* and *H*—raspberries. Rows *I* and *J*—strawberries. Fruit trees should be placed on the north side, if possible, to avoid shading small fruits.

usually cut back, leaving only one or two buds. If fruit trees obtained from the nursery are unbranched whips, they should be headed back to a height of 15 to 20 inches. If they have several good-sized branches well spaced along the trunk, three or four may be left. These should be spaced about a foot apart along the trunk and should point in different directions.

CULTIVATION.—The cultivation of the home fruit garden is similar to that of the vegetable garden; clean cultivation should begin late in April and continue as needed to September. A cultivator that leaves the surface ridged or furrowed to prevent blowing is desirable. Under most conditions the same methods of maintaining the fertility of the soil that are followed in a vegetable garden are successful with fruit. Where stable manure is available, its liberal use generally gives excellent results.

IRRIGATION.—Although irrigation is desirable, water is not often available in most of this region. It is especially needed by the small fruits. If available a good irrigation wetting to a depth of 4 or 5 feet in May or June and another in July may be sufficient except in the Montana, Wyoming, Idaho, and Utah area. In these States regular irrigation should be practiced.

PROTECTION FROM RABBITS AND MICE.—Protection from these pests is essential to apple and crab apple trees during the fall, winter, and spring. If possible, enclose the fruit garden with a rabbitproof fence; otherwise wrap the trunk and lower branches of each tree with heavy paper, burlap, fine wire, or other material.

PRUNING AFTER THE FIRST YEAR.—To many inexperienced growers the question of how to prune trees and bushes appears to be very complicated. If certain basic principles are kept in mind, however, it is possible for even the inexperienced grower to do a satisfactory job of pruning. The purpose of pruning is to develop the tree or bush so that it will have maximum strength to carry a load of fruit and maximum bearing capacity. A safe rule in pruning trees, particularly young trees up to bearing age, is to prune them as little as will accomplish this specific purpose. Cross branches and suckers should be removed, and broken or dying limbs should be cut out. Young trees of most fruits require little pruning before they come into bearing. Pruning of fruit trees in general should be done during the dormant season, preferably in the spring after danger of severe winter freezing is past but before growth of trees has started.

If the growth of grapevines is rather weak during the first season, it is advisable to cut the vine back at the end of the first growing season to one or two buds and to train up a strong trunk during the second growing season. If the vine is to be trained to a fence or a two-wire system, it should be tied to a stake and carried upright until it reaches the top wire. At that point it should be pinched off and two laterals led out, one in either direction, along the wire. During the second season, lateral canes will grow from all the buds along the trunk. Two of these at the height of the first wire above the ground should be selected and tied to that wire to develop fruiting wood. The other branches along the trunk should be rubbed off or pinched back during the growing season.

In most cases the vines, if properly cared for, will begin to bear fruit the third year after planting and should continue to produce a satisfactory crop for many years thereafter.

Pruning should be done while the vines are in a dormant condition. It is important to note that fruit is borne on shoots from the canes of the previous season's growth. In pruning, therefore, enough new wood should be saved to provide for the next summer's crop and the rest should be removed. With healthy, vigorous vines, from 50 to

60 buds will produce as much fruit as the vine can mature properly. More wood may be left on vines for home production, provided sufficient space is available for the vines to develop. With vigorous vines, the leaving of more wood may result in a greater total quantity of fruit, but the individual bunches may be inferior in size and the fruit of poorer quality.

WINTER PROTECTION.—Strawberries should be covered with about 6 inches of clean straw just before the ground freezes. The straw may be left as a mulch between the rows or on each side of a single row. Raspberries and grapes should be completely covered with soil during the winter. They are covered just before the ground freezes in October and uncovered just before the buds start growth in the spring, usually about May 1. The roots of young trees are often protected by piling soil, old manure, hay, or straw around the trunks during the winter, applying it late in the fall and removing it early in the spring.

SPRAYING.—For those who find it possible to spray in order to produce the best quality of tree fruits and grapes, the State agricultural college can furnish a spray program giving details of sprays and times of application.

Using the Crop

It is just as important to save and use the fruit produced as to produce it. The expert housewife becomes acquainted with the best uses of the different kinds and varieties of fruit. When there is an abundant supply of any fruits, more will be used in the diet. Surpluses should be canned, preserved, or frozen. In periods when fruit is not available from the home garden, supplemental fruit should be purchased.

